

# THE USE OF MAP PROJECTIONS IN THE TOPOGRAPHIC AND CADASTRAL WORKS OF IASI CITY

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## Abstract

For creating the geodetic support networks for the topographic and cadastral elevations made in the administrative territory of Iasi city a set of map projections have been used for various time intervals. Practically speaking, the official introduction of a projection system relied on the hypothesis of obtaining the smallest deformations possible for the cartographic representation of angles, distances and surfaces. In this context, for the city of Iasi it resulted necessary the use of the local map projections and the official projections for Romania's territory. The analysis of the deformations identified for the projections used between 1950-2015 in Iasi city focused on establishing the accuracy of framing the graphic and textual databases from the local projection into the official projection. The case study included the comparative analysis of linear deformations and surfaces on geodetic trapeziums and real estates registered in the land register of Iasi city. For this, the specific deformations of the following systems were identified: the local stereographic projection of Iasi; the transverse cylindrical projection, conformal, Gauss-Krüger; stereographic perspective projection, oblique, conformal, on the unique secant plan – 1970; the stereographic projection on the local secant plan of Iasi, that derived from the 1970- stereographic projection. After finishing the implementation of the new unitary cadastre and real estate system, the cadastral recordings of real estates from the existent documentations must be correlated with the ones from the official 1970-Stereographic projection system.

**Key words:** map projection, linear deformation, areolar deformation, geodetic trapezium